1. Information Skills: Conceptual Convergence between Information and Communication Sciences

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ABSTRACT

Nowadays, information is one of the main resources for an individual's development and well-being, so distributing and using information must be a top priority for society. This entails establishing strategies so people can learn to use this resource. Further, scientific progress and present-day educational paradigms stress trans-disciplinary learning. Information and communication sciences are by nature complementary –one focusing on the medium and the other on the process– so there must be greater clarity and conceptual consistency in a number of key shared areas. This contribution is an effort, from the perspective of library science and information science, to identify some possible meeting-points between these disciplines, regarding the study and development of the necessary competencies to handle information adequately.

KEY WORDS

Information skills, information competencies, media literacy, computer literacy, library science, information society, information use.

1. Introduction

This contribution identifies the main points where information and communication sciences converge, discussing the competencies that individuals must develop to handle efficiently information resources, which are an asset that can provide a range of socio-economic benefits to those who know how to use them. Information and communication professionals work with materials and tasks that have many aspects in common: information and knowledge, as well as the processes through which this information and knowledge are conveyed, disseminated, retrieved and used. It is necessary and timely to discuss this topic, because the mass media are doubtlessly a major factor to achieve the ideal goal of distributing information and the knowledge it contains more democratically, which is the aim and theme of a number of international projects promoted by such agencies as the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Organization for Economic Cooperation and Development (OECD). To implement these programmes requires defining indicators and standards to monitor effectiveness, which first calls for a common language – our focus here. Our analysis uses the terms «competencies», «skills» and «capacities» interchangeably as synonyms, to vary the prose, although the three terms do have their semantic nuances. We have also written as if the adjectives «informative and informational» were semantically alike, although they are not identical, and the same goes for the terms «information skill development» and «information literacy», although the latter is conceptually constrained in Spanish, albeit quite prevalent in the English literature.

2. The Present-day Importance of Information

On this topic, we will briefly mention the importance of information in any society, since anyone reading this contribution is doubtlessly convinced of the importance of information resources in our own society. UNESCO has declared (2002: 3): «Information and knowledge have not only become the principal forces of social transformation. They also hold the promise that many of the problems confronting human societies could be significantly alleviated if only the requisite information and expertise were systematically and equitably employed and shared». Along these same lines, a meeting of experts in Prague (2003), also under the auspices of UNESCO, issued the Declaration of Prague: Towards an Information Literate Society (Spenser, 2003: 1-2). This document urges the world's governments to develop interdisciplinary programmes to promote information literacy, as a necessary step toward creating a literate citizenry, an effective civil society and a competitive workforce. Although the exhortation was addressed to governments, this is clearly a task incumbent on all societal sectors. The importance that UNESCO grants information commodities and access to them was materialized in the Information for All Programme (IFAP), created in 2000, to integrate the efforts of governments from the full diversity of the world's countries, in order to create more equitable societies, by improving access to information. This Programme's work has lent fundamental support to the United Nations proposal to devoting the decade from 2003 to 2012 to world literacy[1].

3. The Information and Knowledge society

As we constantly repeat that information and knowledge are the main resources driving contemporary societies, this makes it almost automatic to choose this name for the historic stage that humankind is now experiencing. So, the concepts of «Information Society» and «Knowledge Society» have become commonplace, although they are not always differentiated from each other. This difference starts by understanding that information and knowledge are not synonymous. Readers of this essay surely understand clearly the difference between these terms. For instance, Bell (1985: 154) proposes that, when we speak of information, we are referring to «news, facts, statistics, reports, legislation, tax codes, judicial decisions, resolutions» and so on. Whereas «knowledge is interpretation in context, exegesis, relating and conceptualizing, forms of argument. Knowledge results in theories: the effort to establish meaningful relationships or connections among facts, data and other types of information in some coherent way, and explain the reasons for such generalizations». Some authors (including Bell) take a largely economic angle, asserting that the information society is transcending toward a «knowledge society», by advancing in such indicators as the number of scientists or others in research and development, or the percentage of the Gross Domestic Product devoted to this sort of activities.

Others, such as Pantzar (2000: 230-236), coordinator of the Information Research Programme in Finland, feel that humankind must take advantage of this exponentially expanded information, now easier to distribute thanks to new technologies, to generate useful knowledge to help problem-solving, reduce poverty, unemployment, loneliness, crime, insecurity and war. As human communities access ever-more-plentiful information, they will have the raw material to turn into knowledge and we can then speak of a Knowledge Society.

Another key feature of the information or knowledge society is the so-called digital divide: all those barriers that keep a person or members of a societal group or country from accessing information commodities. Originally posited as mainly an issue of available technologies and skills to handle them, with time other factors have been discussed, including mastery of the competencies necessary to handle information. UNESCO, for example, seldom uses the term digital divide, because it feels that the term refers mainly to one of the problems regarding lack of access to and use of information –the technological aspect– but that, in addition to this factor, there are other obstacles, cultural, political, ethical and educational, that fit better under the concept of a «cognitive divide» (UNESCO, 2005: 23). Certainly, one of the obstacles to better use of information does involve citizens' low or lack of competencies to handle information.

4. Related Concepts and Terms

International efforts to improve information distribution, access and use all grapple with the variety of terms used for the competencies that must be developed, and the broad range of strategies to accomplish this task. In April 2005, in Lyon (France), the

European Regional Meeting on Literacy gathered some 150 participants from 38 nations, belonging to different sectors in their countries. To prepare for the Conference, these participants were asked to fill in an extensive survey on literacy in their countries. The surveys (30 were received) revealed a great variety of definitions for literacy, from different economic, social or cultural angles (Encuentro, 2005).

Of course, standardizing the terminology used is a prerequisite to potentially designing indicators for statistical monitoring of actions undertaken, and results attained. Some current progress in developing international indicators is being coordinated by the UNESCO Statistics Institute, which is initially considering indicators to address three main aspects: supply, to reflect the degree to which governments and other national agencies provide information through a variety of channels; use of information; and the degree to which people acquire the skills needed to use information and communication technologies (UNESCO, 2007: 3).

In Library and Information Sciences, a polemic has long raged about the scope and validity of the different terms used for activities, experiences, or states related to developing the capacities to handle information. This panorama is further complicated by linguistic and cultural differences, and by the continual appearance of new technologies, proposals and perspectives. The discussion has reached such a point that some authors, such as Owusu-Ansah (2005: 366), have called for a truce, now that so much ink has been spilt trying to convince each other about which term is more accurate, when the truth is that supplanting one term by another merely changes the name or descriptor assigned to the concept, but without transforming or clarifying any better the phenomenon identified. The terms being disputed include: «user education, user training, bibliographic instruction, information skills development, information literacy» and, most recently, «information competencies development». In a book that is quite well-known internationally through its translation into Spanish, Wilson (2000: 103) provides a brief description of the main terms used in instructional programs, although obviously referring to those used in United States libraries, where there seems to be less semantic confusion. Wilson speaks of: 1. Library Orientation; 2. Library Instruction; 3. Bibliographic Instruction; and 4. Information Management Education.

However, Wilson feels that these concepts must not only be viewed as semantic variations, but also as a reflection of evolution in practice, where activities and tasks for user education have become increasingly complex. This complexity has been generated largely by the ICTs, which have made it possible both to store greater volumes of information and to retrieve it faster and more effectively. However, it has also made it necessary to know how to handle these technologies and figure out how to sift out clearly the best-quality information.

In several Spanish-speaking countries, it seems that most of the discussion revolves around whether it is better to say «user education» (educación) or «user training» (formación). The latter term, according to a note by Compton García-Fuentes, translator of the book «Reference and Information Services: An Introduction»[2], comes from the French psycho-pedagogical school of thought based on cognitivism and

emphasizing meaningful learning. That same note also refers readers to a book by Bernard Honoré: «Toward a Theory of Education: Dynamics of Formativity». This assertion by Compton García seems accurate because the term «formation» is widely used in the French educational system. In fact, the term that seems to be most used in that country, to refer to information user education, is «Formation à la Maîtrise de l´Information», whereas the literature on education written in English makes almost no use of the term «formativity» (according to a search in the ERIC data base[3]). However, even UNESCO, through the General Information Programme (Tocatlian, 1978: 382) early on (three decades ago) considered «user education» and «user training» as synonyms, defining them as: «any project or program to orient and instruct current and potential users, individually or collectively, in order to help them: a) recognize their own information needs; b) formulate these needs; c) effectively use information services, and d) evaluate these services».

The term «information skills» is consistently used, to this day, in the United Kingdom literature and has been widely disseminated by professionals of the Autonomous University of Ciudad Juárez (Mexico), during the past decade, translated as «Desarrollo de Habilidades Informativas» (DHI), which places the emphasis on the process: «development», and on the product: «information skills». «Informative» as the adjective form has the disadvantage of alluding to «the capacity to inform», so «informational» is more appropriate, referring more directly to the information. However «Informative» has been kept because it was used initially and has become commonplace in Mexico and elsewhere in Latin America. This argument is similar to the one in English-speaking countries that have kept «Information Literacy» despite its semantic limitations. The term «development of information skills» has proven quite useful, stressing the practical aspect of user education sessions, often based in computing centres. However, when we say «development of information skills», we are actually referring to only part of the elements comprising the competencies – knowledge and attitudes must also be added. The phrase development of information skills, or simply the acronym DHI, has taken root deeply among librarians in some Spanish-speaking countries. Moreover, since early 2006, Spaniard librarians have been proposing the acronym ALFIN to refer to informational literacy, as a way of avoiding arguments about the most appropriate term. This initiative has been successful. The acronym is easy to pronounce, but it conceals the term «literacy» (alfabetización) with its negative connotation of an absence of skills or competencies, which must be developed starting right from «ABC» with users. This acronym has been used increasingly, although limited by its having meaning only in Spanish.

4.1. Competencies for Use of Information

A term used increasingly is «information competencies» or «information competencies development». This is surely due to the influence of new educational models benchmarked to competencies that students must demonstrate by the time they complete their studies. Examples of using the term competencies related to information management are frequent: a quick Internet search shows millions of mentions.

A very concrete example is the title of the standards created by the Association of College and Research Libraries, in the document describing the characteristics that a university student should have to become an effective information user – one of the documents most consulted and used in the world of librarianship: «Information Literacy Competency Standards for Higher Education: Standards, Performance Indicators, and Outcomes» (ACRL, 2000). The term «Literacy» could easily have been left out.

One major difference between these terms involves those activities by agents external to the individual who receives their impact (such as the work of librarians) and others driven by one's own initiatives and personal, individual work. Thus, discussions of bibliographic instruction, library instruction or information literacy (which we will discuss below) usually refer to activities that librarians design and do to teach users about library resources and services and how to use them, with somewhat passive user participation; the concept of user education also has this connotation.

In new educational paradigms, these perspectives tend to lose momentum, as the learning process is expected to depend mainly on individuals' own personal work and initiative. This agrees increasingly with cognitive theories of learning, defined as «an individual act related to each individual's conceptual structure and knowledge» (Hernández Salazar, 1998). Moreover, the literature constantly repeats that thinking skills, displayed through critical thinking, are a factor complementing competencies for mastering information. At the same time, critical thinking develops better as people become more self-sufficient in their learning –among other things, by using information resources more effectively. It is therefore necessary for educational systems to help students develop critical thinking, although there is actually very little theory as of yet about how to support this process. Information professionals involved in user education programs must also learn more about this topic and how to facilitate information and mass media users' development.

4.2. Information Literacy

The concept of «Information Literacy» was coined by Paul Zurkowski in a 1974 report to the National Commission on Libraries and Information Science, describing the main skills that employees would need in the growing service sector of the United States. According to Zurkowski: «People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing a wide range of information tools… in molding information-solutions to their problems» (Kapitske, 2003: 39). Patricia S. Breivik (2006: 7-8) writes that a major feature of this concept is that it takes «information literacy as a product. It is a product of the student's learning. It does not involve stimuli or inputs, but rather what people can do after having received those stimuli or inputs». Breivik's connotation is not implicit literally in the term, since it has the same instructional orientation as the phrases of «user education» or «training», and therefore does not reflect constructivist learning trends.

This concept of «information literacy», which can be expressed several ways in Spanish, appears as the broadest and most widely used, having arisen in English-speaking countries, which have published most of the literature on this topic. Therefore, the term has spread, at least in the West, if not worldwide. In other languages, as in Spanish from Spain, the English word is used directly, rather than translating it, as is done in Latin America. The constraint, again, is that «literacy» portrays the information user as a person without competencies, who must be taught from scratch, their «ABCs». This generates confusion in Spanish-speaking countries, because the word «literacy» usually means minimal capacities to read and write, and the tasks required to teach those capacities. A similar situation arises in France, where the term used is «Formation à la Maîtrise de l'Information» (Chevillote, 2003: 24-25). Further, it is interesting to read recent proposals, even in the United States, to replace the concept of «Information literacy» with, for example, «Information fluency», with the argument that the former has a negative connotation, seeming to view learners as «illiterates». The concept of «Information fluency» has the advantage of giving the idea that individuals are just trying to enhance their information management competencies (Mani, 2004: 30). The Information Literacy Section of the International Federation of Library Associations and Institutions (IFLA) discussed, in 2006, a name change to some other more appropriate term that would be linguistically acceptable in other major languages. However, their study concluded that the same name should be kept, in view of its international recognition, even among library funding agencies, and recommended that each country adopt the most appropriate term in their own language.

5. Relationship with Other Forms of Literacy

Using the English term of «information literacy» in the following sections for practical reasons and because the literature cited uses it (despite all the arguments due to its semantic limitations), we will review the relationship of this concept among the disciplines of communication and information sciences, which is our main topic. Some authors, such as Bawden (2002: 361-408) have made an effort to attempt to establish a relationship among different skills related or close to information literacy. This group of skills is often referred to as a form of literacy, understood not only as the ability to read and write, but to perform the necessary tasks to function adequately in a given context. So, Bawden analyzes the relationship between information literacy and the other following forms of literacy: 1. Library Literacy; 2. Media Literacy; and 3. Computer Literacy. «Based on an analysis of several internationally-known indices, the author finds that the term «information literacy» has spread since the early 1990s, whereas «media literacy» has been growing in use through the end of the 1990s». Another way to find quickly relationships among different competencies or literacies is by checking the thesaurus of the Education Resources Information Centre (ERIC), one of the best data bases for educational topics. According to the ERIC thesaurus, searching for the term «literacy», a range of related terms appears (see Figure 1)[4].

Scope Note:	Ability to read and write -- also, communication with written or printed symbols (i.e., reading and writing)
Broader Terms:	n/a
Narrower Terms:	Adult Literacy; Emergent Literacy; Family Literacy; Functional Literacy; Information Literacy; Media Literacy; Reading; Scientific Literacy; Workplace Literacy; Writing (Composition).
Related Terms:	Basic Skills; Cultural Literacy; Illiteracy; Literacy Education; Metalinguistics; Numeracy; Reading Skills; Reading Writing Relationship; Writing Skills.
Used For:	Literacy Skills.
Add Date:	07/01/1966

Figure 1

5.1. Computer Literacy

A special mention goes to the relationship between developing information skills or competencies and computer literacy, because the former are sometimes used more broadly, to include information and communication technologies. It is also common to find people, including students, who think that good information management is guaranteed by mastery of computers and other ICTs. The flaw there is that information competencies refer not only to skills and knowledge, but also attitudes, which will not accrue just by knowing how to use technologies. In fact, there are certain very important skills to manage efficiently information that computer literacy may not necessarily generate: thinking skills, necessary to analyze, evaluate, infer, and generalize the information one reviews.

In this regard, the Association of College and Research Libraries, drafters of the ACRL standards, took a position to clarify this: «Information literacy is related to information technology skills, but has broader implications for the individual, the educational system, and for society… Information literacy, while showing significant overlap with information technology skills, is a distinct and broader area of competence. Increasingly, information technology skills are interwoven with, and support, information literacy» (ACRL, 2000: 3).

5.4. Other Literacies

A document by Fransman (2005: 9-10), distributed by UNESCO, lists the competencies or literacies that grant access to information and knowledge, including the following: Information literacy; (New) media literacy; Digital / computing / ICT literacy; Visual literacy; Environmental literacy; Political / civic / citizen literacy; Cultural literacy.

In a more intricate representation (see Figure 2), Catts and Lau (2008: 18) share the idea that developing information skills or information literacy is a core element

to many models of competencies for adults. The constellation of skills that an individual requires to function adequately in society is varied: at its foundation is the person's ability to reason, to think critically; followed by the next level, the capacity to communicate verbally, speaking and listening, so citizens can interact with the world they live in; then come the competencies of literacy, reading, writing, and numerical operations, among others. This segment of the constellation of skills is fundamental to modern life, because the citizen will have skills to communicate in writing in different walks of life. All the preceding strata of competencies require, in turn, reinforcement by skills to handle information technologies and mass media; the former enable handling of digital technology, and communication tools. When an individual has these competencies, he or she can definitely develop greater media capacities to access, filter, judge and use the information received through multiple channels, including the mass media, which comprise a society's information life, especially in an industrialized society. Additionally, information competencies such as media skills or ability to use the mass media are indispensable for the person to identify their own information needs, and have the capacity to satisfy them by locating, retrieving, and evaluating information, according to their own parameters of significance, in order to use it, build new concepts and make decisions while climbing that scaffolding assembled with prior knowledge and new information; and then, ideally, communicate their cognitive output through a document (note, article, book or audiovisual medium) or any other written or oral means.

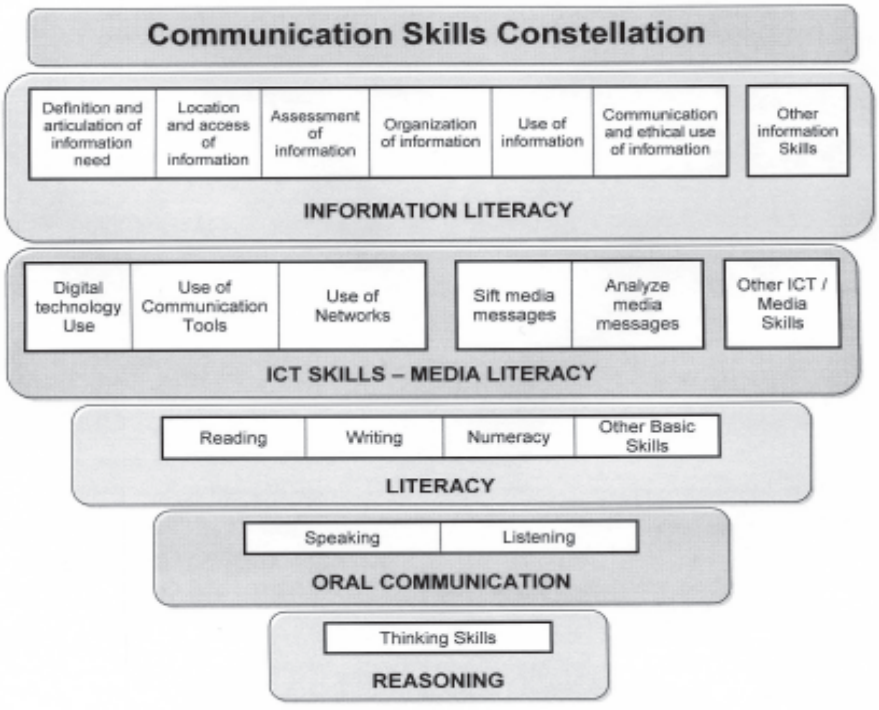

Figure 2. Source: Ralph Catts and Jesus Lau (2008).
Towards Information Literacy Indicators. Paris: UNESCO, 46; 18.

6. Managing Information from Mass Media, from a Librarian's Perspective

Much of the next section must be viewed with some subjectivity, because it is based mainly on the authors' personal appraisals. However, there may be some lines that should be pursued more deeply. First, the type of information traditionally presented in the media, compared to that which receives more attention from librarians and information professionals.

6.1. Information of Interest to Librarians

First of all, we are aware that development of ICTs fosters keeping the formats used to publish and query information the same, so it is necessary to pay more attention to the origin and purposes of information. Information professionals grant greater importance to information that can be considered academic or has the characteristics of having been developed following methodologies qualifying as scientific. Therefore, much of the information circulating in the mass media (e.g. newspapers, blogs, television and radio programmes, among others) is considered unworthy of notice. The type of materials considered «good» are documents of an academic nature, such as an article in a journal, books and other academic and scientific productions, for which the ability to identify, locate and retrieve them requires acquiring skills. By contrast, the mass media reach users generically, so to speak, almost always omnipresent, quite unlike academic information, which must be sought out and located.

Librarians and other information professionals feel that the mass media work regularly with information that has been put together differently from academic information and even pursues different aims. The mass information published in such media (mainly in electronic or audiovisual media such as radio, television and the Internet media, where fleeting flows predominate) competes for consumers' attention, by offering novelty information. Therefore, that information was probably not gathered by following academic-type systematized methodologies. The information circulating in the mass media is not what is most necessary or useful, but what is likeliest to catch the audience's attention. Of course, the mass media also have scientific research, such as feature articles in newspapers, or documentaries on television. As for the way that information is expressed in academic media, regardless of the media used, the main difference seems to lie in making it clear regularly whether the author has factual support for the information, or he just mentions ideas that came to mind; this is less clear in the information published through the mass media. To better explain and understand this distinction, according to Argudín (2001: 86-100), information is regularly presented in the form of: 1. Facts - Information that can be validated; 2. Inferences - Fact + Opinion, inducing one thing from another, and 3. Opinions - Value judgments.

These factors listed by Argudín are common to any kind of information. However, in academic communications, the different types are always –or ought to be– clearer. From an information professional's perspective, this does not always happen with the information published in media such as TV, newspapers, radio, and other

media broadcast over Internet, among others. This does not necessarily mean that the information containing plenty of the authors' opinions is worthless, because their opinions are surely value added, if backed by facts (making an inference) –this is not the case with unsubstantiated opinions. In short, the daily news, published by the mass media, poses greater risks in terms of accuracy for readers, who have usually not developed the skills to distinguish reliable information from unreliable material.

Further, more information circulates in the media with the ulterior purpose of persuading the audience to make certain viewpoints their own. For instance, during election times, the media are saturated with messages and news that may be slanted by the authors' particular interests regarding the contending candidates; in fact, some media are or become allies of one side or the other (Aceves, 2001).

7. Common and Differentiated Competencies

The relationship between information literacy or information competency development and developing skills in using mass media is tightly linked to the goals of each. The greatest difference lies in the emphasis they place on the different competencies they seek to develop. For information literacy, one emphasis is to seek and retrieve information, whereas in media literacy, the emphasis is more on evaluating the information; where both competencies coincide fully is to use the information critically. Similarly, information competency development emphasizes using materials mostly of an academic or scientific sort. This is a priority for this type of competencies, because they usually involve complex citizen decision-making and educational work by individuals, from elementary school to adulthood and post-graduate studies, while developing media competencies is generally for any citizen's societal functions, whether strictly social or economic and political. In other words, they are ideally competencies for the entire public, for any individual who not only reads, but for any person able to listen and watch the different mass communication alternatives on the market. Further, it is difficult to separate the aims of the two competencies in regard to the target audience, since developing information competencies, at least theoretically, targets

Figure 3

AoC, Unesco, European commission, Comunicar

all sorts of individuals, i.e., children, adults, scholars and citizens in general, although the main efforts are made for the educational sector; meanwhile, developing media competencies also targets the public at large but, as with information competencies, usually focuses more on citizens in general. Figure 3 describes the close inter-relationship between the two groups of competencies and their target audiences, which are the same; the media; where they have differences; and the capacities they emphasize, for citizens to become informationally equipped. The elements in the figure cannot be separated strictly, since they are all adjacent and overlapping, to a greater or lesser degree.

8. Conclusions

Information competencies required by an individual grow in complexity with the activities he or she is engaged in, whether the man or woman on the street, or a scientist –which could turn out to be the same person, but in different settings. If information needs are for day-to-day use, the required competencies will be really basic and simple, but as the decisions demanded become more complex, they will require more profound skills, as in academic or research settings. In other words, information skills will have to be more developed, which depends on the person's experience and education. These complex information needs require greater availability and access to formats with gatekeepers, such as journals or hard-copy / digital books, which entail more complex production mechanisms than the regular contents of a newspaper or television programme –not to deny that there are newspaper articles and television programmes with in-depth research and reasoning– which also demand high levels of knowledge and competencies for citizens to understand and reason with such messages. However, generalizing (and thereby obviously glossing over their particular features) about information skills implies that they are more oriented toward using more complex documents, whereas media skills for dealing with the mass media are (also venturing to generalize) for using simpler information for commonplace application to individuals' day-to-day lives.

Both kinds of competencies –information and media competencies– are vital. Media skills obviously define a society's capacity to criticize the media that bombard them every day, and this decides the society's daily destiny, while information skills are linked to a country's scientific and academic capacity to generate science and technology, among other applications in production and humanistic sectors.

As a final conclusion, the range of informational and media competencies have a common convergence in the capacity to handle information inputs with critical capacity; where they differ is in their emphasis on search and retrieval skills, and the types of information documents they use. The individuals with whom both disciplines want to work (librarianship / information sciences and communication sciences) are the same, all the way from children beginning school through post-graduate scholars, including regular citizens. In both, the aim is for people to develop critical judgment to use information. The difference is that librarianship emphasizes the use of academic

and scientific information and communication sciences favour the use of mass media, in their huge audiovisual and written variety.

Notes

[1] More information on this Programme can be found at the UNESCO (http://portal.unesco.org/ci/en/ev.php-URL_ID=21290&URL_DO=DO_TOPIC&URL_SECTION=201.html) (2008-05-28).

[2] Richard E. Bopp & Linda C. Smith (Eds.) (2000). Reference and Information Services: An Introduction. The note appears on p. 101 of this book.

[3] Search retrieved on 30 September 2008, using the term «Literacy» on the ERIC Website (www.eric.ed.gov).

[4] Search retrieved on 30 September 2008, using the term «Literacy» on the ERIC Website (www.eric.ed.gov).

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